UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,857	05/23/2001	Satish Chandra	LUT 2 0056	9910

7590 12/02/2004	**EXAMINER**
Richard J. Minnich, Esq.	TON, ANTHONY T

ART UNIT	PAPER NUMBER
2661	

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DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/863,857	CHANDRA ET AL.
	Examiner	Art Unit
	Anthony T Ton	2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>23 May 2001</u>.
2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-16* is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1-16* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on <u>23 May 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

PHIRIN SAM
PRIMARY EXAMINER

Attachment(s)	
1) ☒ Notice of References Cited (PTO-892)	
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)	
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification Objection

1.   The disclosure is object to because of the following informalities:

Term "are **describe**" in page 7 line 14 is improper; this would be a typographical error.

Examiner suggests changing this term to "are **described**".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   **Claims 1-16** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Kong et al.*

(US Patent No. 6,700,881) hereinafter referred to as *Kong,* in view of *Yang* (US Patent

Application Pub. No. 2002/0171568 A1).

a) **In Regarding to Claim 1**: *Kong* disclosed a method of verifying that a CDMA code

allocator maintains mutual orthogonality between all concurrently busy codes, said method

comprising:

identifying a code being allocated by the allocator *(see col.17 lines 10-14: orthogonal*

code of length N (identified code)); and

determining if the identified code is busy *(see col.20 lines 15-24; and Fig.9 step 913)*;

Kong failed to explicitly disclose determining if any ancestral parent of the identified

code is busy; and determining if any descendant of the identified code is busy.

Yang explicitly disclosed such determining if any ancestral parent of the identified code

is busy; and determining if any descendant of the identified code is busy *(see Para. [0042] in*

page 3: In order to maintain orthogonality, a code can be assigned to a user if and only if no

mother code of this specific code or children code of this specific code is used).

At the time of the invention, it would be obvious to a person of ordinary skill in the art to

combine such determining if any ancestral parent of the identified code is busy; and determining

if any descendant of the identified code is busy, as taught by *Yang* with *Kong*, in order to

maintain orthogonality in a CDMA communications network. The motivation for doing so would

have been for deciding if a code is mother code or children code of other code without searching

the entire code tree is needed *(see the last sentence in Para. [0042] of Yang's disclosure).*

Therefore, it would have been obvious to combine *Yang* with *Kong* in the invention as specified

in the claim.

Kong also failed to explicitly disclose if at least one of: the identified code; one of the

identified code's ancestral parents; or one of the identified code's descendants; is determined to

be busy, then an error in allocator operation is indicated.

However, *Kong* has disclosed that when all the orthogonal codes of length N *(the*

identified code as the instant claim) are used, the procedure go to step 929 *(as shown in Fig.9)* to

indicate unavailability of the orthogonal codes and the terminates a search *(see col.17 lines 19-22*

and col.18 lines 13-15).

Although *Kong* did not indicate an error at his decision block 213 *(see Fig.2)* like the

instant claim, it would be obvious to a person of ordinary skill in the art to implement such an

error indication at his decision block via the step 929 that indicates the absence of the available

orthogonal code of length N as shown in Fig.9 of *Kong* as a design choice. The motivation for

doing so would have been to assign orthogonal codes such that the available orthogonal codes

should be maximized *(see Kong: col.17 lines 15-16)*. Therefore, it would have been obvious to

implement such an error in allocator operation with *Kong* in the invention as specified in the

claim.

b) **In Regarding to Claim 2**: *Kong* further disclosed the method further comprising:

stimulating the allocator with an artificial call generator *(see col.5 lines 5-19: generate a*

control signal); and

monitoring an output of the allocator to identify the codes being allocated by the allocator

(see col.16 lines 11-15: the base station continuously monitors the assigned orthogonal codes).

c) **In Regarding to Claim 3**: *Kong* further disclosed the allocator is simulated *(see col.8*

lines 11-23: the orthogonal code generator in the first orthogonal modulator 361 generates the

orthogonal code of length 256 (hence, the allocator is simulated)).

d) **In Regarding to Claim 4**: *Kong* further disclosed the determinations of steps (b),

(c) and (d) are made by accessing a storage device in which current code states are maintained

(see col.17 lines 23-44 and col.18 lines 22-35: The search list W(k) stores information; and the

orthogonal codes stored in the search list W(k)).

e) **In Regarding to Claim 5**: *Kong* disclosed all aspects of this claim as set forth in

claims 1 and 4.

Kong failed to explicitly disclose the storage device comprises a look up table arranged as a binary tree of codes in which each parent code is a common node for its two children codes.

Yang explicitly disclosed such a look up table arranged as a binary tree of codes in which each parent code is a common node for its two children codes *(see Fig.2)*.

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a look up table arranged as a binary tree of codes in which each parent code is a common node for its two children codes, as taught by *Yang* with *Kong*, in order to maintain orthogonality in a CDMA communications network. The motivation for doing so would have been for deciding if a code is mother code or children code of other code without searching the entire code tree is needed *(see the last sentence in Para. [0042] of Yang's disclosure)*. Therefore, it would have been obvious to combine *Yang* with *Kong* in the invention as specified in the claim.

f) **In Regarding to Claim 6**: *Kong* further disclosed the method further comprising:

repeating steps (a) through (d) each time a code is allocated by the allocator *(see Fig.9: YES at steps 913, 919 and 925; and NO in step 921)*; and

saving a historical record of the allocator's operation with respect to maintaining mutual orthogonality between all concurrently busy codes *(see Fig.9 step 915 and col.22 lines 6-9)*.

g) **In Regarding to Claim 7**: *Kong* further disclosed the method further comprising:

designating code states such that an otherwise idle code is designated as busy when the code is allocated, and an otherwise busy code is designated as idle when the code is de-allocated *(see col.20 lines 14-36: the decision block 213 examines the available orthogonal codes to determine whether there are orthogonal codes not satisfying – if any)*.

h) **In Regarding to Claim 8**: *Kong* further disclosed the designations of code states are maintained in a storage device which is accessed to make the determinations of steps (b), (c) and (d) *(see col.22 lines 6-22)*.

i) **In Regarding to Claim 9**: *Kong* disclosed all aspects of this claim as set forth in claims 1, 6 and 8.

Kong failed to explicitly disclose the storage device comprises a look up table arranged as a binary tree of codes in which each parent code is a common node for its two children codes.

Yang explicitly disclosed such a look up table arranged as a binary tree of codes in which each parent code is a common node for its two children codes *(see Fig.2)*.

At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine such a look up table arranged as a binary tree of codes in which each parent code is a common node for its two children codes, as taught by *Yang* with *Kong*, in order to maintain orthogonality in a CDMA communications network. The motivation for doing so would have been for deciding if a code is mother code or children code of other code without searching the entire code tree is needed *(see the last sentence in Para. [0042] of Yang's disclosure)*. Therefore, it would have been obvious to combine *Yang* with *Kong* in the invention as specified in the claim.

j) **In Regarding to Claims 10-16**: all of the claimed subject matters of these claims have been disclosed in the claims 1-9 by *Kong* and *Yang* as described above. Therefore, the rejections to claims 1-9 would also apply to reject the claims 10-16, in an allocator testing system as taught.

Examiner Information

4.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Anthony T Ton** whose telephone number is **571-272-3076**. The examiner can normally be reached on M-F: 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Ken Vanderpuye** can be reached on **571-272-3078**. The fax phone number for the organization where this application or proceeding is assigned is **703-872-9306**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

by :

Anthony T. Ton
Patent Examiner
November 19, 2004

PHIRIN SAM
PRIMARY EXAMINER